

**TOWN OF BROOKLINE
CONTRIBUTORY RETIREMENT SYSTEM**

Actuarial Valuation Report

January 1, 2004

TABLE OF CONTENTS

	<u>Page</u>
REPORT SUMMARY	
Highlights	1
Introduction	2
Actuarial Experience	3
 ACTUARIAL COSTS AND LIABILITIES	
Normal Costs	4
Present Value of Actuarial Accrued Liabilities	5
Present Value of Future Benefits	6
 FUNDED STATUS AND APPROPRIATIONS	
Market Value of Plan Assets	7
Actuarial Value of Assets	8
Unfunded Actuarial Accrued Liabilities	9
Appropriations	10
Appropriation Forecast	11
GAS No. 25 and GAS No. 27	13
PERAC Annual Statement	14
 EXHIBITS	
1 Age/Service Distribution with Salary	16
2 Retiree Distribution	17
3 Disabled Retiree Distribution	18
4 Distribution Forecast	19
5 Summary of Plan Provisions	20
6 Actuarial Methods and Assumptions	27
7 Glossary of Terms	31
 CERTIFICATION	33

Report Summary:

<u>Highlights</u>	<u>January 1, 2002</u>	<u>January 1, 2004</u>
<u>Contributions</u>		
Funding Schedule FY 2005	\$9,533,000	\$9,533,000
Funding Schedule FY 2006	9,760,000	9,936,789
<u>Funded Ratios</u>		
GAS No. 25	68.4%	66.7%
<u>Participants</u>		
Actives	1,278	1,420
Inactives	504	626
Retirees and Beneficiaries	611	629
Disabilities	<u>178</u>	<u>182</u>
Total	2,571	2,857
<u>Payroll</u>		
Payroll of Active Members	\$45,109,610	\$52,378,086
Average Payroll	35,297	36,886
<u>Normal Cost</u>		
Employer	2,164,869	1,990,917
Employee	3,358,157	4,117,411
Administrative Expenses	<u>350,000</u>	<u>325,000</u>
Total	5,873,026	6,433,328
<u>Actuarial Accrued Liabilities</u>		
Actives	125,919,097	127,425,563
Retirees, Beneficiaries, Disabilities and Inactives	<u>124,559,246</u>	<u>138,016,066</u>
Total	250,478,343	265,441,629
<u>Actuarial Value of Assets</u>	<u>171,285,347</u>	<u>177,153,465</u>
<u>Unfunded Actuarial Accrued Liabilities</u>	\$79,192,996	\$88,288,164

Introduction

This report presents the Town of Brookline actuarial valuation findings as of January 1, 2004, under the Commonwealth of Massachusetts Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2004.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Town of Brookline Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2004.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the year, the total unfunded actuarial accrued liability increased by 11.48% to \$88,288,164. The increase is the result of net unfavorable actuarial experience during the preceding years. The primary component of the unfavorable experience was an investment return less than the 8.00% assumption.

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Superannuation	\$3,973,113	\$4,133,761
Death	224,659	292,200
Disability	837,102	1,018,672
Terminations	488,152	663,695
Administrative Expenses	<u>350,000</u>	<u>325,000</u>
Total Normal Cost	5,873,026	6,433,328
% of Pay	13.0%	12.3%
Employee Contributions	3,358,157	4,117,411
% of Pay	7.4%	7.9%
Employer Normal Cost	\$2,514,869	\$2,315,917
% of Pay	5.6%	4.4%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactive. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Actives		
Superannuations	\$115,642,967	\$119,938,195
Death	2,848,781	\$3,185,400
Disability	8,402,081	\$6,622,550
Terminations	(974,732)	(\$2,320,582)
Retirees and Inactives		
Retirees	89,812,679	100,690,152
Disabled Retirees	33,282,257	35,635,416
Inactives	<u>1,464,310</u>	<u>1,690,498</u>
Total	\$250,478,343	\$265,441,629

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive as well as all benefits earned and expected to be earned in the coming years by the active. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Actives		
Superannuation	\$154,440,460	\$157,345,478
Death	5,031,099	5,796,376
Disability	16,935,520	15,054,567
Terminations	3,786,820	4,078,782
Retirees and Inactives		
Retirees	89,812,679	100,690,152
Disabled Retirees	33,282,257	35,635,416
Inactives	<u>1,464,310</u>	<u>1,690,498</u>
Total	\$304,753,145	\$320,291,269

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Cash equivalents	\$12,631,733	\$5,226,212
Short term investments	0	14,379,464
Fixed income securities	61,634,502	50,413,475
Equities	87,651,069	82,363,581
International	0	21,100,343
Real Estate	0	7,071,067
Venture Capital	0	0
Other	990,416	1,778,175
Accounts receivable	668,710	353,718
Accounts payable	(8,616,415)	(15,170,058)
Accrued income	<u>753,937</u>	<u>449,144</u>
Total Market Value	\$155,713,952	\$167,965,120
Total Actuarial Value	\$171,285,347	\$177,153,465

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 10%. The calculation of the actuarial value of assets as of January 1, 2004 is presented in Table V.

	<u>January 1, 2004</u>
(1) Market value at January 1, 2003	\$142,464,859
(2) 2003 Contributions	\$14,088,424
(3) 2003 Payments	(\$16,761,930)
(4) Net interest adjustment at 8% on (1), (2), and (3) to December 31, 2003	\$11,290,249
(5) Expected market value on January 1, 2004	\$151,081,602
(1) + (2) + (3) + (4)	
 (6) Actual market value on January 1, 2004	 \$167,965,120
(7) 2003 (Gain) / Loss	(\$16,883,518)
(8) 80% of 2003 (Gain) / Loss	(\$13,506,814)
(9) 2002 (Gain) / Loss	\$23,311,409
(10) 60% of 2002 (Gain) / Loss	\$13,986,846
(11) 2001 (Gain) / Loss	\$15,262,935
(12) 40% of 2001 (Gain) / Loss	\$6,105,174
(13) 2000 (Gain) / Loss	\$13,015,699
(14) 20% of 2000 (Gain) / Loss	\$2,603,140
Actuarial value on January 1, 2004, (6) + (8) + (10) + (12) + (14)	
(15) but not less than 90% nor greater than 110% of (6)	\$177,153,465
 Ratio of actuarial value to market value	 105.47%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Actuarial Accrued Liability	\$250,478,343	\$265,441,629
Actuarial Assets	<u>171,285,347</u>	<u>177,153,465</u>
Unfunded Actuarial Accrued Liability	\$79,192,996	\$88,288,164
Funded Status	68.4%	66.7%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2023
\$ 88,221,770 over 19 years with 3.5 % increasing payments
- Level amortization of the Early Retirement Incentive unfunded liability by June 30, 2008
\$ 66,394 over 5 years
- Interest adjustment for payments deposited semiannually.

The pension appropriation is shown in Table VII.

Table VII

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
Normal cost	\$2,514,869	\$2,315,917
Amortization payment of the accrued liability	6,045,801	6,747,957
Amortization payment of ERI	15,397	15,463
Total cost	\$8,576,067	\$9,079,337
% of Pay	19.0%	17.3%
Fiscal 2005 cost	\$9,533,000	\$9,533,000
Fiscal 2006 cost	\$9,760,000	\$9,936,789

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be spread over the fiscal year.

The employer total cost is expected to increase during the next 19 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 18.2% of payroll, decreasing to 14.0% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 2.4% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

Appropriation Forecast
(amounts in thousands)

Fiscal Year Ending	Employee Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2005	\$52,378	\$4,117	\$2,457	\$7,076	\$9,533	18.2	66.7
2006	54,735	4,365	2,501	7,436	9,937	18.2	69.9
2007	57,198	4,628	2,544	7,695	10,239	17.9	72.9
2008	59,772	4,904	2,586	7,964	10,550	17.7	75.6
2009	62,462	5,197	2,626	8,242	10,868	17.4	78.2
2010	65,273	5,506	2,665	8,514	11,179	17.1	80.5
2011	68,210	5,832	2,702	8,812	11,513	16.9	82.6
2012	71,279	6,176	2,737	9,120	11,857	16.6	84.6
2013	74,487	6,539	2,769	9,439	12,208	16.4	86.4
2014	77,839	6,923	2,799	9,770	12,568	16.1	88.1
2015	81,342	7,328	2,826	10,112	12,937	15.9	89.7
2016	85,002	7,755	2,849	10,465	13,315	15.7	91.2
2017	88,827	8,206	2,870	10,832	13,701	15.4	92.6
2018	92,824	8,681	2,886	11,211	14,097	15.2	93.9
2019	97,001	9,183	2,897	11,603	14,501	14.9	95.1
2020	101,366	9,713	2,904	12,009	14,914	14.7	96.2
2021	105,928	10,272	2,906	12,430	15,336	14.5	97.2
2022	110,695	10,861	2,902	12,865	15,767	14.2	98.2
2023	115,676	11,482	2,892	13,315	16,207	14.0	99.1
2024	120,881	12,138	2,875	0	2,875	2.4	100.0
2025	126,321	12,829	2,850	0	2,850	2.3	100.0
2026	132,005	13,558	2,818	0	2,818	2.1	100.0
2027	137,946	14,326	2,777	0	2,777	2.0	100.0
2028	144,153	15,136	2,726	0	2,726	1.9	100.0
2029	150,640	15,817	2,849	0	2,849	1.9	100.0
2030	157,419	16,529	2,977	0	2,977	1.9	100.0
2031	164,503	17,273	3,111	0	3,111	1.9	100.0
2032	171,905	18,050	3,251	0	3,251	1.9	100.0
2033	179,641	18,862	3,398	0	3,398	1.9	100.0
2034	187,725	19,711	3,550	0	3,550	1.9	100.0
2035	196,173	20,598	3,710	0	3,710	1.9	100.0
2036	205,000	21,525	3,877	0	3,877	1.9	100.0

* Calendar basis

** As of beginning of the Fiscal Year

GAS No. 25 and GAS No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

Table VIII

	<u>January 1, 2002</u>	<u>January 1, 2004</u>
(1) Actuarial Accrued Liability	\$250,478,343	\$265,441,629
(2) Actuarial Value of Assets	<u>171,285,347</u>	<u>177,153,465</u>
(3) Unfunded Actuarial Accrued Liability	79,192,996	88,288,164
(4) Funded Ratio (2)/(1)	68.4%	66.7%
(5) Covered Payroll	\$45,109,610	\$52,378,086
(6) UAAL as a percentage of payroll: (3)/(5)	175.6%	168.6%
(7) Annual Required Contribution (ARC)	\$9,090,631	\$9,533,000
(8) Net Pension Obligation	\$0	\$0

PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Mellon Human Resources & Investor Solutions as of January 1, 2004.

The normal cost for employees on that date was:	\$4,117,411	7.9% of pay
The normal cost for the employer was:	1,990,917	3.8% of pay
The actuarial liability for active members was:		\$127,425,563
The actuarial liability for retired members was:		138,016,066
Total actuarial accrued liability:		265,441,629
System assets as of that date:		177,153,465
Unfunded actuarial accrued liability:		\$88,288,164
The ratio of system's assets to total actuarial liability was		66.7%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.25%
Rate of Salary Increase:	5.0%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a percent of Covered Payroll
	(a)	(b)	(b-a)	(a/b)	(c)	(b-a)/c
01/01/03	\$177,153,465	\$265,441,629	\$88,288,164	66.7%	\$52,378,086	168.6%
01/01/02	171,285,347	250,478,343	79,192,996	68.4%	45,109,610	175.6%
01/01/00	160,983,529	217,964,030	56,980,501	73.9%	43,028,894	132.4%
01/01/98	121,604,190	192,305,540	70,701,350	63.2%	40,150,666	176.1%
01/01/96	93,285,890	156,258,190	62,972,300	59.7%	36,686,332	171.7%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

Age/Service Distribution with Salary as of January 1, 2004

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	23	0	0	0	0	0	0	0	0	0	23
	4,859	0	0	0	0	0	0	0	0	0	4,859
20-24	131	0	0	0	0	0	0	0	0	0	131
	12,676	0	0	0	0	0	0	0	0	0	12,676
25-29	207	15	0	0	0	0	0	0	0	0	222
	22,339	32,168	0	0	0	0	0	0	0	0	23,003
30-34	68	32	3	0	0	0	0	0	0	0	103
	26,948	54,837	41,670	0	0	0	0	0	0	0	36,041
35-39	72	32	29	11	0	1	0	0	0	0	145
	28,367	47,729	55,141	47,223	0	60,014	0	0	0	0	39,643
40-44	57	21	20	46	10	0	0	0	0	0	154
	30,806	42,660	45,563	49,170	63,321	0	0	0	0	0	41,936
45-49	50	22	22	39	39	5	0	0	0	0	177
	27,776	40,165	46,303	51,652	62,233	52,678	0	0	0	0	45,175
50-54	32	12	18	20	20	44	15	1	0	0	162
	28,420	40,763	38,644	47,917	57,833	60,356	53,908	42,516	0	0	47,630
55-59	23	12	15	32	10	23	39	12	0	0	166
	33,020	34,789	37,095	39,166	49,263	55,978	64,172	57,014	0	0	47,914
60-64	9	11	6	17	12	9	18	15	1	0	98
	17,796	37,364	45,811	34,838	64,021	47,557	55,650	53,063	35,957	0	45,593
65-69	1	1	4	3	2	5	1	5	1	0	23
	18,350	31,160	28,138	39,728	48,456	24,714	43,690	52,355	49,054	0	37,228
70+	2	0	2	2	1	3	2	3	1	0	16
	38,525	0	18,469	46,904	17,052	38,010	31,854	22,366	120,808	0	36,906
Total Employees	675	158	119	170	94	90	75	36	3	0	1,420
Average Salary	22,727	43,626	44,793	45,956	59,487	54,802	58,939	51,431	68,606	0	36,886

Retiree Distribution as of January 1, 2004

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	1	1	0	9,480	9,480
35-39	0	0	0	0	0	0
40-44	1	0	1	1,528	0	1,528
45-49	0	0	0	0	0	0
50-54	2	1	3	56,041	32,780	88,821
55-59	15	8	23	483,864	120,032	603,896
60-64	45	23	68	1,495,773	338,529	1,834,302
65-69	68	33	101	2,015,981	602,588	2,618,570
70-74	60	46	106	1,623,581	692,775	2,316,356
75-79	91	48	139	1,784,232	490,889	2,275,120
80-84	55	43	98	843,113	487,189	1,330,303
85-89	20	31	51	249,020	248,982	498,002
90-94	12	19	31	85,388	140,819	226,208
95-99	3	4	7	35,662	17,067	52,729
Total	372	257	629	8,674,182	3,181,132	11,855,314
Average (Age/Payment)	73.9	76.4	74.9	23,318	12,378	18,848
Frequency Percent	59.1	40.9	100	73.2	26.8	100

Disabled Retiree Distribution as of January 1, 2004

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	2	1	3	53,346	23,028	76,374
40-44	2	0	2	70,836	0	70,836
45-49	6	0	6	228,672	0	228,672
50-54	16	1	17	341,832	5,525	347,357
55-59	19	1	20	586,885	23,154	610,038
60-64	27	2	29	668,993	73,853	742,845
65-69	20	1	21	469,347	16,887	486,233
70-74	27	2	29	545,734	23,462	569,196
75-79	25	3	28	546,679	19,973	566,651
80-84	19	2	21	323,471	28,241	351,711
85-89	2	3	5	25,515	33,480	58,996
90-94	1	0	1	15,974	0	15,974
95-99	0	0	0	0	0	0
Total	166	16	182	3,877,284	247,602	4,124,885
Average (Age/Payment)	67.2	71.5	67.5	23,357	15,475	22,664
Frequency Percent	91.2	8.8	100	94	6	100

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2004	\$16,488	\$4,117	\$9,533	\$14,129	\$11,291
2005	17,542	4,365	9,937	15,031	11,791
2006	18,593	4,628	10,239	15,972	12,246
2007	19,615	4,904	10,550	16,953	12,792
2008	20,568	5,197	10,868	17,982	13,479
2009	21,561	5,506	11,179	19,067	14,191
2010	22,521	5,832	11,513	20,213	15,037
2011	23,545	6,176	11,857	21,427	15,915
2012	24,568	6,539	12,208	22,714	16,893
2013	25,519	6,923	12,568	24,086	18,058
2014	26,514	7,328	12,937	25,552	19,303
2015	27,501	7,755	13,315	27,123	20,692
2016	28,400	8,206	13,701	28,813	22,320
2017	29,329	8,681	14,097	30,638	24,087
2018	30,167	9,183	14,501	32,612	26,129
2019	30,951	9,713	14,914	34,759	28,435
2020	31,690	10,272	15,336	37,099	31,017
2021	32,359	10,861	15,767	39,656	33,925
2022	33,050	11,482	16,207	42,454	37,093
2023	33,725	12,138	2,875	45,236	26,524
2024	34,336	12,829	2,850	47,420	28,763
2025	34,866	13,558	2,818	49,793	31,303
2026	35,390	14,326	2,777	52,376	34,089
2027	35,821	15,136	2,726	55,195	37,236
2028	36,165	15,817	2,849	58,269	40,770
2029	36,466	16,529	2,977	61,636	44,676
2030	36,706	17,273	3,111	65,328	49,006
2031	36,917	18,050	3,251	69,380	53,764
2032	37,040	18,862	3,398	73,829	59,049
2033	38,284	19,711	3,550	78,669	63,646

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2004, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees for the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. **Salary**

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. **Member Contributions**

Member contributions vary depending upon date hired as follows:

<u>Date of Hire</u>	<u>Member Contribution Rate</u>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of \$30,000

5. **Average Salary**

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. **Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. **Service Retirement**

a. **Eligibility:**

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service
- (iv) if an employee is a State Police officer (Group 3), attainment of age 50

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For Group 3 (State Police), the benefit is 50% of the participant's final year's rate of regular salary, plus an additional 1% for each year of service in excess of 20 years. In addition, for veterans (all groups) there is an additional benefit of \$15 per year for each year of service, up to a maximum of 20 years of service.

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus \$450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2004.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.25% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 5.0% per year.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees'

Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of unrealized gains and losses.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both preretirement and postretirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<u>Attained Age</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2004 is \$325,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. **Actuarial Accrued Liability**

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. **Actuarial Assumptions**

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. **Actuarial Cost Method**

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. **Actuarial Present Value**

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. **Forecast**

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the Town of Brookline contributing as of January 1, 2004, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost is reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Mellon Human Resources and Investor Solutions

Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 99-4086

May 2004